Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEAN-PIERRE DATH, LUC DELORME, JACQUES-FRANCOIS GROOTJANS, XAVIER VANHAEREN and WALTER VERMEIREN

Appeal No. 2002-1864
Application No. 09/206,208

HEARD: March 20, 2003

Before WARREN, WALTZ, and DELMENDO, Administrative Patent Judges.
WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the primary examiner's final rejection of claims 1, 2 and 4 through 12, which are the only claims pending in this application.[1] We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellants, the invention is directed to a process for the production of olefins by the catalytic cracking of

[1]An amendment dated July 26, 2001, Paper No. 12, subsequent to the final rejection, has been entered by the examiner as per the Advisory Action dated Aug. 10, 2001, Paper No. 13.

an olefin-containing feedstock by using a pretreated MFI crystalline catalyst under particular cracking conditions (Brief, pages 2-3). Illustrative independent claim 1 is reproduced below:

> 1. A process for the catalytic cracking of an olefin-containing feedstock which is selective toward light olefins in the effluent, the process comprising contacting a hydrocarbon feedstock containing at least one olefin with a MFI crystalline silicate catalyst having a silicon/aluminum atomic ratio from 180 to 1000, which has been obtained by pretreating so as to increase the silicon/aluminum atomic ratio thereof by heating the catalyst in steam to reduce tetrahedral aluminum in the crystalline silicate framework to form alumina and de-aluminating the catalyst by treating the catalyst with a complexing agent for aluminum to remove aluminum from the pores of said crystalline silicate at an inlet temperature of from 500 to 600˚C and at an olefin partial pressure of from 0:1 to 2 bars to produce an effluent with an olefin content of lower molecular weight than that of the feedstock.

The examiner has relied upon the following references as evidence of obviousness:

Eberly, Jr., et al. (Eberly)	3,506,400	Apr. 14, 1970
Colombo et al. (EP '060) (published European Patent Application)	0 109 060	May 23, 1984

The claims on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over EP '060 in view of Eberly (Answer, page 3). The claims on appeal also stand provisionally rejected under the judicial created doctrine of obviousness-type double patenting over (1) claims 1, 2, 5-10, 12, 13 and 15 of copending application

no. 09/206,207 (Answer, page 4); (2) claims 1-14 of copending application no. 09/206,218 (Answer, page 5); (3) claims 9-14 of copending application no. 09/206,210 (*id.*); and (4) claims 1, 2, 4-10, 12-14, 16-20, 22, 24 and 27 of copending application no. 09/206,216 (Answer, page 6).

We summarily *affirm* all of the examiner's provisional rejections based on obviousness-type double patenting for the reasons stated in the Answer. We *reverse* the examiner's rejection based on section 103(a) essentially for the reasons stated in the Brief, Reply Brief, and those reasons set forth below. Therefore the decision of the examiner to reject the claims on appeal is *affirmed.*

OPINION

A. The Rejections based on Obviousness-type Double Patenting

Appellants do not contest the examiner's provisional rejections based on the judicially created doctrine of obviousness-type double patenting (Brief, pages 4-5). Appellants state their intention of submitting an appropriate terminal disclaimer when one or more of the copending applications listed above issue as a patent (Brief, page 5). Accordingly, we summarily affirm all of the examiner's provisional rejections based on the judicially created doctrine of obviousness-type double patenting. *See In re*

Wetterau, 356 F.2d 556, 557-58, 148 USPQ 499, 500-01 (CCPA 1966); *Ex parte Karol*, 8 USPQ2d 1771, 1773-74 (Bd. Pat. App. & Int. 1988).

B. The Rejection based on 35 U.S.C. § 103(a)

The examiner finds that EP '060 discloses a process for producing olefins by catalytic cracking an olefin feedstock with a zeolitic catalyst such as silicalite or ZSM-5 with a silica/alumina atomic ratio of greater than 175 under reaction conditions encompassing the claimed parameters (Answer, page 3). The examiner recognizes that EP '060 does not disclose, *inter alia*, the claimed pretreatment of the catalyst including steaming and aluminum extraction (*id.*). To remedy this deficiency, the examiner applies Eberly for the disclosure of a process for treating zeolite by steaming followed by contact with a complexing agent to remove aluminum from the gross structure of the zeolite, thereby increasing the silica/alumina ratio (Answer, page 4). From these findings, the examiner concludes that it would have been obvious to one of ordinary skill in the art to modify the process of EP '060 "by dealuminating the zeolite to achieve the desired silicon:aluminum atomic ratio as suggested by Eberly because the resulting zeolite will have higher stability." *Id.*

It is incumbent upon the examiner, when proposing a combination or modification of references, to identify some suggestion to combine the references or make the modification. *See In re Mayne,* 104 F.3d 1339, 1342, 41 USPQ2d 1451, 1454 (Fed. Cir. 1997). As correctly argued by appellants (Brief, pages 7-10; Reply Brief, page 3), Eberly is not directed to MFI-type catalysts and only suggests silica/alumina mole ratios much lower than those required by EP '060 (and much lower than those required in the claims on appeal). Eberly does disclose that the catalysts are useful in cracking processes (col. 1, ll. 64-71, and col. 9, ll. 55-61) and that higher silica/alumina mole ratios provide greater stability to heat, steam and acid (col. 2, ll. 20-25). However, these "higher" silica/alumina mole ratios suggested by Eberly are ones such as 8:1 to 12:1 (col. 2, ll. 25-34), with examples as high as 29:1 (Table IV, col. 8, l. 11). Eberly teaches heating a catalyst in steam, followed by extraction with EDTA, results in a catalyst with an "extremely high" silica/alumina mole ratio of about 20 (see Table III, col. 7, ll. 18-37). The <u>lowest</u> silica/alumina mole ratio suggested by EP '060 is 350 (see EP '060, page 1, and the Answer, page 3, converting this value to an atomic ratio of greater than 175). The examiner has not presented any

convincing reasoning, suggestion or motivation as to why one of ordinary skill in this art would have modified the process of EP '060, with catalysts already possessing silica/alumina atomic ratios of greater than 175, with the catalyst pretreatment of Eberly when Eberly teaches that silica/alumina mole ratios of 8 through 20 provide sufficiently increased stability. Accordingly, we determine that the examiner has not presented convincing reasons for the proposed combination of references and therefore no case of *prima facie* obviousness has been established.[2] Thus we cannot sustain the examiner's rejection based on the combination of EP '060 and Eberly.

C. Summary

The examiner's rejection of claims 1, 2 and 4-12 under 35 U.S.C. § 103(a) over EP '060 in view of Eberly is reversed.

The examiner's provisional rejections of claims 1, 2 and 4-12 based on the judicially created doctrine of obviousness-type double patenting over (1) claims 1, 2, 5-10, 12, 13 and 15 of application no. 09/206,207; (2) claims 1-14 of application no. 09/206,218;

[2]Since we determine that no case of *prima facie* obviousness has been established, a discussion of appellants' countervailing evidence of non-obviousness (Exhibits B and C attached to the Brief) is unnecessary to this decision.

(3) claims 9-14 of application no. 09/206,210; and (4) claims 1, 2, 4-10, 12-14, 16-20, 22, 24 and 27 of application no. 09/206,216 are affirmed.

Therefore the decision of the examiner to reject the claims on appeal is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

CHARLES F. WARREN Administrative Patent Judge	)	
THOMAS A. WALTZ Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ROMULO H. DELMENDO Administrative Patent Judge	)	

TAW/jrg

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